Reach for the Stars

Strategic Studies Group (SSG)

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1. INTRODUCTION

Reach for the Stars is a game of galactic exploration, colonisation and conquest. Throughout the game you must explore new star systems and colonize the most promising planets. Your colonies produce resources which you must allocate to defence, research and development, environmental and social factors, consumer contentment and industrial expansion. You must also develop a (military) policy to deal effectively with the alien threats which are certain to arise.

The following information describes the standard game. The galaxy is a 34 by 23 hexagonal grid as displayed on the data card. It is important to note that the map is also wrapped around (a toroid), so movement off one edge results in a return on the opposite edge. This would mean, for example, that Pollux is 4 hexes from Capella and that Saiph is 9 hexes from Zosma.

There are always four empires in the game. Any number of these may be controlled by human players and the rest will be controlled by computer players. In each turn, every empire is given orders by its controlling player.

Every odd numbered turn is a production and movement turn, even numbered turns are movement only. Production orders are given and executed first (if it is a production turn), and then movement orders can be given. While giving your orders, you can examine a number of reports. These show a summary of explored star systems, the current status of all task forces, current victory points and the status of all game options.

When all four players have completed giving orders, the computer then executes the movement of ships. When ships of different empires end up in the same star system, combat will occur. Each player is given the option of withdrawing his ships after each round. Combat continues until there are only ships belonging to a single player left in the system. When warships are in a system containing an enemy planet, and no enemy ships, the warships may attack the planet's defences. If they destroy all the defences on the planet, or there were none on the planet to begin

with, then the population in any transport ships may be used to invade and conquer the planet.

After all combat is resolved the next turn begins. This process repeats until the last game turn is executed or an overwhelming victory has occurred. The player with the highest victory point score is the winner.

2. GETTING THE GAME GOING

2.1. System Requirements

Reach For The Stars requires an IBM PC, XT, AT or PS/2, or a Tandy 1000/3000 series computer or any other 100% IBM compatible machine with 256K of memory.

The program supports the following graphics cards Enhanced Graphics Adaptor (EGA), Color Graphics Adapter (CGA), Hercules Graphics Card (HGC), Multi Color Graphics Array (MCGA) and Video Graphics Array (VGA). It can also utilise the 16 color version of CGA graphics used by most Tandy machines.

The program disk does not include DOS and requires PC/MS-DOS Version 2.1 or greater to run. The program is supplied on a 5.25" diskette. Users who wish to acquire a 3.5" diskette should return the 5.25" diskette along with $5 plus $2.50 postage and handling costs to us. North Americans should use our US Office and everyone else should use our Australian Office.

Other components included with the game are this manual and a galactic map.

2.2. Backup and Hard Disk Install

The program disk is not copy protected. Floppy disk users should use the standard DOS commands to copy the master disk before use. Do not use the original disk for game playing.

Hard Disk users should create a directory on their hard disk and copy all of the files from the master disk to the hard disk. All program files must be in the same directory to run. If you wish to save games in a different directory to the program you must create this directory before saving any games to it.

2.3. Setup

You must run the Setup program before you can play Reach For The Stars. Boot your computer with DOS. Floppy disk users should insert the copy of the Reach For

The Stars in drive A: and type SETUP (RETURN). Hard Disk users should change to their Reach For The Stars directory and type SETUP (RETURN).

You will be presented with a number of choices which will customise the program for your particular equipment.

Display Adaptors. There are 6 choices; CGA, Tandy CGA, HGC, EGA, MCGA or VGA. Even if your display adaptor is not listed it may be compatible with one of the above graphics systems. Use the arrow keys to move the cursor to the appropriate choice and type (RETURN) to confirm your choice.

Monitor Type. Specify whether you have a color or monochrome monitor attached to your system.

Graphics Mode. This choice applies only to those computers with a CGA card or Tandy computers using the enhanced CGA graphics available on most Tandy machines. You are given a choice between 320x200 mode or 640x200 mode. In 320 mode, some reports will take up the whole screen but the space screen will have more colors available for its display. In 640 mode, more information can be displayed on the screen at once, but there are fewer colors. (For standard CGA users, 640 mode is monochrome). Choose whichever mode suits your needs.

Save Game Drive or Directory. This nominates the drive or directory in which the program will save games and also look for saved games to restore. Single Floppy drive users should enter A: Dual Floppy drive users should enter B: Hard Disk users can type the pathname of another directory if they do not wish to save games in the program directory. Users with one floppy drive should use a separate, formatted save game disk and will be prompted to insert this disk when necessary.

Sound On/Off, Star Twinkle On/Off. Choose these options to suit your own requirements. Once you have completed the setup choices, type ESC to move the cursor to the save setup menu item and hit RETURN to accept this. You can now follow the startup instructions for the program. If you wish to change these options at any time simply run the Setup program again.

2.4. Startup

Boot your computer with DOS. Floppy disk users should insert the copy of the Reach For The Stars in drive A: and type RFTS (RETURN). Hard Disk users change to their Reach For The Stars directory and type RFTS (RETURN). If you have not run the Setup program first an error message will request you to do so.

2.5. Loading and Saving Games

Reach For The Stars will load and save games from the drive or directory specified in the setup procedure. The Save As and Restore commands will present a window with a list of games. Use the arrow keys to select a file or type the name you require. File names cannot be longer than 8 characters and must follow the normal DOS rules for file names. All save games will be created with the extension .RFS automatically. You do not have to type the extension.

3. CONTROLLING YOUR COMPUTER

This section explains the particular keyboard commands used to control Reach for the Stars.You should read through the commands and then go on to play the tutorial game.

Reach for the Stars presents information in windows. Each window has a data area which displays or edits game data. It may also have a command menu, which lists various command options, typically commands to process or execute the current data, or to fetch new data.

3.1. Window Commands

The most important window is the space window which displays a portion of the galaxy. Other windows may overlay the space window. If there is more than one window on the screen, then one particular window will be the active window, to which all commands will apply. If a window is the active window, then its title bar will be highlighted. If none of the overlaying windows are highlighted then the space window is the current window and the space window cursor will be flashing.

The MINUS key cycles around the open windows, selecting each window in turn to be the active window. If no other window is active then the space window is the active window. The PLUS key brings the active window to the front of the screen. (The space window is always the rearmost window and cannot be brought to the front). The DEL key closes the current window.

3.2. Cursor Commands

If a window displays data which can be edited, it will contain a cursor which will highlight one of the data fields. Data may only be edited if a window is both active and at the front. The arrow keys will move the cursor between fields. To change a field simply move the cursor, type the required data and hit the RETURN key.

A window may also contain a menu area, which lists various commands. The ESC key will toggle the cursor between the data area and the menu area. When the

cursor is in the menu area, the arrow keys will move the cursor along the menu choices and the RETURN key will execute the highlighted command. An alternative, and quicker method, is to use the function keys. In the active window f(n) will execute the nth choice of the menu area, without having to move the cursor to the menu area. The main command line is always visible at the bottom of the screen. It is considered to be the menu for the space window and can be reached via the ESC key or the function keys when the space window is the active window. In addition, ALT f(n) will execute the nth command of the main command line regardless of the current window or the cursor location.

In this manual, the term "select" shall mean to choose and execute a particular command, either by using the ESC, arrow and RETURN keys, or by using the function keys.

3.3. The Space Window

When the space window is active, the arrow keys will move the cursor over the screen. Moving the cursor over a star will bring up the star window, containing all the information known about the star system, but will not make that window active.

Hitting the RETURN key will bring up the Task Force Control window, if you have ships in the star system or open the production window for that planet if you are still doing production. In addition to moving the cursor with the arrow keys, pressing HOME centres the screen on the cursor, PAGE UP and PAGE DOWN scroll the space window one screen up or down, and moving the cursor to the edge of the window will cause the space window to scroll one hex.

4. THE TUTORIAL

Following the instructions in this section will take you through a tutorial game for the first nine turns; enough to get your space empire started. You must enter the items exactly as shown, otherwise the tutorial will diverge from the script with undefined results. Follow the startup instructions for your computer in Chapter 1. It tells you how to set up Reach for the Stars and get the game started.

If you follow those instructions, you will be presented with a start up window which allows you to change the names of the four empires, select each as a human controlled empire or one of the three levels of computer controlled empire and select the length of game you wish to play.

If you haven't read Chapter 3, Controlling Your Computer, you should do so now. Player one is highlighted and set as human so we will choose this as your empire. Begin by typing in a name for yourself. Type "Esesgees" and hit RETURN. Use the arrow keys to choose Player 2 and type "Esesions". Use the arrow keys to choose Beginner and hit RETURN. Do the same for players 3 and 4, naming Player 3 "Gadawr" and Player 4 "The Forth" and making both of those Beginner players as well.

The only thing left to do is to turn on the Tutorial option. Type ESC and the cursor will move to the menu area. Highlight the Option command and press RETURN. A menu will appear, select Optional Rules to get the Optional Rules window. Select the Tutorial option, at the top of the window. The option name will be highlighted to show that it is active. Either type ESC and hit RETURN to choose the Continue option or type f(1).

That's it. You're ready to go. Choose Start and hit RETURN to start a new game with the parameters you have just set.

4.1. Turn 1

You now see before you the space background and the player select window. Since you are the only human player, only the Esesgee option is highlighted. Select it to begin your turn.

You now see the production set up for your home planet. The Production window occupies the entire screen, with production details and information on your star system and home planet. The f(10) key toggles between the production window and the space window. Do this now. Note the cursor over your star system and the special colony symbol. Type f(10) again to return to the Production window.

Select the Advice option in the Production menu. The computer will fill in its recommendations for production. Note the order for four scout vessels, a good idea for the beginning of a game. For now accept the computer's advice.

As you have only one planet, the Next Planet and Prev Planet options are disabled. The arrow keys will not move the cursor to these items, nor will the f(2) or f(3) keys have any effect. Note that the End Production command, which is the fourth option under the Production menu, is still selected by f(4). Select it to end the Production phase.

You will see a ship symbol appear on the space screen to indicate the scouts that have just been built and the star display will update to show any improvements made to your planet. The Task Force Control window also opens to allow you to give orders to your scouts.

At the moment it shows 4 scouts without a destination, i.e. in orbit. Again, let's get the computer to do the work for us. Select Auto Explore from the Main menu by typing ALT f(3).

After a moment you will see that each of your scouts has been placed in a separate task force, each has its own different destination and has an ETA of one turn. That's all you need to do for this turn so select End Turn (ALT f(4)) from the Main menu.

As each computer controlled empire is given orders you will see a message indicating which empire is active. After all orders are entered you will see ship symbols come and go on the space display, indicating the arrival of task forces at star systems, and then you will be prompted to start your next turn.

4.2. Turn 2

This is a movement only turn so no production windows open; instead the Task Force Control window is open for your scout at Phaeda. Before giving any orders select Status from the Main menu and then Explored Systems from the menu. The window that opens is a summary report for information on star systems. Use the arrow keys to scroll down the report and you will see data for the star systems you have just explored with your scouts as well as your home system. The PAGE UP and PAGE DOWN keys scroll the report one page at a time. At this point it may be best to explain what data is available to you in the Star System display.

The star system window shows the name of the star system in the title followed by its spectral class. Under this is the data area for each planet. The owner line will show which empire controls the planet and, if it is conquered, the ID of the original owner to the right of this. The number to the left of the slash for Population and Industry is the actual level whilst the number to the right is the maximum level. The two values for Environment are, from left to right, social and planetary. The last line shows the planet's defences, normally the number of Planetary Defence Bases (PDBs). The size of the local army is shown to the right of this in the advanced rules.

The Task Force Control will open if there are any ships on which to report, and will show any enemy ships as a separate task force at the top of the window.

These complete details are only visible to a player who has a colony or ships in the system. Otherwise only the factors of maximum population, maximum industry and planetary environment can be seen and the ship display will not open.

OK. It's time you gave a direct order to a starship. First, close the Explored Systems window with the DEL key. The scout at Phaeda has no destination, and is considered in orbit around the system. Make the Task Force Control window active

with the MINUS key if it is not already so. Select the destination field of the scout at Phaeda. Begin typing the name Megrez and the computer will finish the name for you as soon as it recognises a unique destination. The Task Force window will update the destination to Megrez and give the distance to it as 7 hexes.

Now select Auto Explore from the Main menu to assign the other three scouts and then select End Turn. You will again be informed as each computer controlled empire has its turn and then you will see ship symbols moving around, including the arrival of your scout at Megrez.

4.3. Turn 3

After selecting the Esesgee option to start your turn you will again see the production windows open for Furud. It's time to start building a space armada to go and conquer the first alien you find. Type 1 and press enter. You have ordered one more industry factor to be built on Furud. Now move the cursor to the Mark 1 line. Type in 12 and press RETURN. Select End Production from the Production menu. The beginnings of your star fleet will then be constructed and appear on the screen in the Task Force Control window. Close the Task Force Control window and the Star System window with the DEL key. The Space window is now the only window on the screen and is the active window. Use the arrow keys to move the cursor to Megrez.

Look at the star system display; you have come across the Esesions home world! What a co-incidence! Your current fleet of 12 Mark 1s is no match for the Esesions' Planetary Defence Bases (PDBs) at this time, and you have no invading troops, but that can be remedied over the next two production cycles. Again select Auto Explore and then End Turn.

4.4. Turn 4

This is a movement only turn and you will only be moving the scouts. First, select Status then Victory Conditions to see how things are going. You will see that all the VP scores are very close. That's normal this early in the game. Select Auto Explore and End Turn.

4.5. Turn 5

Production again. This time choose the Mark 1 field and type in 15. That will use up almost all of your resources; the few remaining may as well be saved for next turn so end production now.

Since you are planning an invasion of Megrez and it will take two turns for slow Mark 1s and Transports to reach there, it may be an idea to send one warship to spy on and harass the system, blocking the Esesions off from their global resource points. This is known as interdiction, and is a good thing to do to someone else. Select the New TF (Task Force) command from the menu area. Choose the Mark 1 field of the new Task force and type 1. Select Status then Full Map. You will now see the strategic display of the game map. Your home system, Furud, is highlighted. Find Megrez toward the top, right corner. Move the cursor to Megrez and it will appear as the destination for your task force.

Once more select Auto Explore and End Turn. You may see brief moments of combat as other computer players fight amongst themselves. It's likely that one of them just lost a scout but you have no way of knowing for sure.

4.6. Turn 6

Open the Task Forces display (select it from the Status Menu). You will see the locations of your scouts, the 26 Mark 1s in orbit about Furud, and one Mark 1 In Flight to Megrez. The Mark 1 In Flight is still in hyper space; it has not completed its voyage. You will not see it on the map and you cannot give it any new orders until it arrives at Megrez. For now, send your scouts off automatically and then pick End Turn.

As the turn is executed you will be notified that your lone Mark 1 has arrived at Megrez and is in a position to attack the planet. What you see is the Star System window for Megrez and the Task Force Control window for your lone Mark 1. One Mark 1 against all those planetary defence bases is not a good bet. It is better to hold off in orbit, blockading the planet so choose Cancel and allow the turn to finish executing.

4.7. Turn 7

This production turn your Mark 1 at Megrez is causing the Esesions a few financial problems while you complete the construction of your grand fleet. Order the construction of 10 colonists and 14 Mark 1s and end production. You are now prepared to launch your invasion. Send all your ships to Megrez. Choose automatic scout exploration and then end the turn.

There is again the sound of laser fire but this time it's bad news. The combat window opens and you see that some newly constructed Esesion Mark 1s have just eliminated your Esesgeean "peace mission". With your fleet on the way you know they must pay for this outrage! Select the Continue option on the combat screen to resume play.

4.8. Turn 8

Select Task Forces from the Status menu. You will see your fleet In Flight to Megrez. Their ETA shows they will arrive during the execution of this turn. Select Auto Explore and End Turn.

The moment you have been waiting for arrives; the combat screen opens and you see that your fleet's initial encounter was a success, the Essessions have lost their entire fleet! Press continue. Your ships are now poised to attack the defences on the Esesion planet.

Form a new Task Force and enter all of your Mark 1s but none of your transports. The destination will be shown as the enemy planet and the ETA will read Attack (ATK). Select Attack from the menu. You could abort the attack by selecting Cancel but you show no fear. Order that attack!

Notice that you are the only one with the option to withdraw as the Esesion defence bases cannot flee. The odds are on your side, (and we wrote the script), so press Continue until the PDBs are all eliminated.

You will then be given the option to bombard the planet. Bombardment is a good idea since you do not have enough troops to easily control a planet with such a

large population, and you can get a few victory points for colony destruction. Choose the bombardment option, and you will see any damage reflected in the star system display.

Now it is time to invade. You should send all ten transports down to invade. Type 10 in the invade window and select the Done option. Your flag is now planted on alien soil.

4.9. Turn 9

A production turn. This time you may give production orders for the planet at Megrez as well. The best advice here is to create the maximum number of colonists at Megrez in order to reduce the population and, after production is over use the transports to colonize Megrez. This will add those transports to your current garrison and improve your control of the planet (you will need 1 garrison per 2 population to hold a conquered world securely). The Production menu now has the Prev Planet and Next Planet items enabled to allow you to cycle through your planets.

Select Victory Conditions from the Status menu and you will see how many victory points you have gained from all this activity. You have now mastered the basics of Reach for the Stars. Play on from here and enjoy the game!

5. THE GAME FUNCTIONS DESCRIBED

5.1. Building Your Forces

Resource points are the crux of the game. The player who makes the most will invariably win. Production occurs on every second turn beginning with turn one. At the beginning of production, each populated planet produces Resource Points (RPs) according to the following formula.

RPs = (pop x2) + (ind. cap x soc level)/16

Note that populations in excess of the maximum population capacity for the planet do not contribute to this formula.

Each player is then presented with the production window which shows the production units ordered and resource points available for the current planet. Orders are given for each planet under the empire's control, including conquered planets, and no order is permanent until End Production is chosen.

RPs not consumed in a particular production phase are transferred to Global RPs and become available on subsequent production turns to other planets of the empire. This represents interstellar trade and Global RPs earn interest at the rate of 6.25% per production phase.

The production order entry window gives a list of items that may be ordered. The first column, under Units, is where the number of units required are entered by the player. The column under the heading RP will show how many RPs that quantity will cost to manufacture. As RPs are assigned they are taken first from RPs produced on the planet this turn, then from Global RPs.

When enemy warships are present in a star system, the planets in that system are interdicted. This means there is a blockade on all interstellar trade to those planets so they have no access to Global RPs during the production phase.

The Production Window identifies the planet currently being given orders, shows available Global and Planet RPs, and the GPP (Gross Planetary Product, the

total RPs produced by this planet at the beginning of the turn). The total RPs spent on research and development since the beginning of the game are also shown.

The Next Planet/Prev Planet option in the Production menu will cycle through all of the empire's planets. When all planets have at least been inspected the End Production option will be enabled. Choosing this will cause all production orders for your empire to be carried out and then place you into the movement routines.

The following items may be ordered for production. Note that the RPs necessary for Servicing Population and Maintaining PDBs are automatically entered by the computer. You may, of course, change these but you should be aware of the consequences of doing so.

Industry. Each unit of industry ordered will increase the planet's actual industrial capacity. The number of units that may be ordered is limited to the available RPs and the planet's industrial maximum.

Social Environment. The Social Env level is a factor in determining planetary RP production and population growth. If the Social Env is less then 40, the population will decrease, if greater than 40 then the population will increase. The social level will tend to move towards the Planetary Environment from turn to turn and may also be affected by riots, natural disasters and warfare. An uninhabited planet always has a social environment of 0.

Planetary Environment. The Planet Env strongly influences the level of the Social Env and thus, indirectly, production and population growth. Building up planetary environment may well be of greater value than continual investment in the more cheaply improved social level. Planet Env is only increased by ordering units in production but may be decreased by riots, natural disasters and warfare.

Service Popn. This represents the provision of consumer goods and services to your populations. Each unit of population serviced costs 1 RP. You cannot service more than the existing population but if you service less you may cause riots and unrest proportional to the extent of your tyranny. This will manifest itself in a lower

birthrate, industrial sabotage and pollution of the environment, possibly reducing a once profitable economy into a worthless junk pile.

PDB Maint. Every PDB requires maintenance and will be eliminated without it. This cost is dependant on the current ship tech level.

PDB New. A maximum of 5 PDBs may be constructed per turn for each planet. Again, the cost of a new PDB is determined by the current ship tech level. The maximum number of PDBs that may be constructed is 50.

Colonists. These are the population that are to be embarked on transports to become colonists or invading troops. The population unit and transport are constructed together and become inseparable until put down on a planet, at which time the transport is permanently destroyed. Up to 25% of a planet's population will be available for emigration each turn as well as all population in excess of the planet's population capacity. In combat, transports have no fire power but, if escorted by warships, will take on the defensive capability of the highest tech level warships present. Unescorted transports are sure to be atomised in droves during combat.

Other Starships. Scouts are unarmed, exploratory vessels, the Mark I through Mark IV series are warships with progressively greater offensive and defensive strengths as well as higher movement allowances. The total number of these ships that a planet may construct in a turn is limited to the current industrial capacity. Furthermore, Mark II to Mark IV warships cannot be constructed until the research and development costs have been paid for the appropriate ship tech level. See the next paragraph.

Ship Tech. All players begin the game with the technology to produce Mark I warships. To reach Mark II technology, and thus be able to construct Mark II warships, an investment of 400 RPs is necessary. The computer keeps track of your installments and displays the accumulated amount in the Production window. The investment of a further 1000 RPs and 2000 RPs respectively, will develop Mark III and Mark IV technology. In addition to enabling the construction of better starships, ship development investment improves the fighting capability (and increases the

cost) of all of your PDBs. Note that, regardless of technological development, the maximum rating for PDBs is a Mark III equivalent.

5.2. Moving Your Ships

Every turn you may give orders to some, none or all of your ships. They can form Task Forces and travel from star to star or colonize a planet orbiting their current star.

At the beginning of your turn all ships are unassigned. By selecting a star where you have ships, the Task Force Control window will open. The left-most column displays a task force destination, the others detail the number of ships of each type present and the Estimated Time of Arrival at the destination. To get your ships moving you must form some or all of them into a Task Force and give it a destination. No orders given are permanent until you choose to end the turn.

Once a Task Force is in-flight it is out of contact until the turn it arrives at its destination, so ships cannot be reassigned once they are on their way.

5.3. The Task Force Controls

At the start of the turn the computer consolidates all ships present in the system into a single task force without a destination. This may be considered as the pool of ships from which you draw ships for your task forces.

Prev Star/Next Star. These will change the Task Force Control window to show ships about another star system. Repeated selection will eventually bring you full circle to the original system.

New Task Force. This will create a new line in the Task Force Control window without ships or a destination. Ships are added to a new task force by moving the cursor to the appropriate column and typing in the number of ships desired. The ships will be subtracted from the pool and added to your new task force. Do this for each type of ship that you wish to include.

A destination is specified by moving the cursor to the destination column. You may then type the star name of your destination or select a star with the cursor from the space window. Any task forces without a destination at the end of a turn are considered in orbit, and will be consolidated into the system pool for the next turn.

Reform. Will de-allocate the highlighted task force and return all its ships to the pool. It will also combine any existing task forces which are without destinations.

Colonize. If you have transport ships present these may be assigned to colonising uninhabited planets or planets you own within the current star system. Choosing Colonize will open the Colonize Form window which allows you to select how many of your transports you wish to land on each planet.

When you are finished select the Done option, and the transports will be placed in a Task Force for each planet specified with a destination of "Colonize". This is also a method for adding to a garrison on a conquered planet as all colonists put down on such a planet automatically join the garrison.

The Task Force Control window will also show the presence of enemy task forces over your system. These will be highlighted and their destination will read "Enemy". Regrettably, it is not possible to edit an enemy task force.

5.4. Starship Battles

Ship to Ship. Whenever ships belonging to different empires are in the same star system and at least one warship is present (Mark Is through Mark IVs), then a round of combat will occur.

Scouts are automatically wiped out on encountering enemy warships and no combat report is given other than to quickly highlight the star where the battle took place and bring you the sound of atomising metal as the scout is vaporised.

If ships other than scouts are involved and any of the controlling players are human the combat screen will open. For each player it shows how many of each type of ship are still operational under the OP heading and how many ships were destroyed last round under the KIA heading.

At this point players may elect to withdraw some or all of their ships by selecting the appropriate withdraw button. This will enter the normal ship movement system. You are not forced to withdraw all of your ships at once or in the same TF. Once you close the Task Force Control window the Combat screen will then be re-opened. You may continue combat by selecting the Continue button or make further withdrawals.

Withdrawn ships move normally to their destination in the next movement phase.

The winner of a ship to ship combat (i.e. the last player to have ships left in the star system) will receive victory points for all destroyed enemy ships. If you withdraw from a combat, or are eliminated, you receive no points for any ships you may have killed.

The combat system is heavily weighted in favour of the side with the most ships, assuming equal ship types. A fight between a force of 100 ships and one of 75 fought to the finish, should result in the extinction of the 75, with losses of about 50 to 60 for the larger side.

Ship to Planet. When warships are in a star system containing one or more enemy planets and no enemy ships are present, they may attack the enemy planets. The player will be presented with a display of the star system and a window similar to the Task Force Control window. The attack may be cancelled by selecting Cancel.

For attacks on more than one planet in the same star system, all Task Forces must be assigned to those attacks before selecting Attack from the menu.

If proceeding with the attack, warships are formed into Task Forces in the normal manner. A default target planet is indicated. If there are several planets that may be attacked use the Prev Planet/Next Planet items in the Attack Menu to select the target world.

To initiate all attacks in a star system, choose Attack from the Attack menu. The Combat window will open in turn for each attack. The planetary defence bases

will appear as warships of the appropriate level and combat proceeds as normal, although only the attacking ships may withdraw.

If all the PDBs are wiped out, the attacking warships may then bombard the planet for one round in an attempt to damage industry and reduce the population. Victory points are awarded for colony destruction.

5.5. Conquering Worlds

Colonies undefended by PDBs may be invaded if transport ships are present. The Invade window (similar to the Colonize Form window) will open. Enter the number of transports you wish to use as storm troopers for each valid planet and then select Done. Invasion takes place immediately.

Conquered planets are important both in terms of the additional RP production and the victory points awarded. To keep hold of a conquered planet a garrison equal in size to at least half the population is required. That garrison then acts as PDBs in defence of the planet. If the garrison is not large enough you will see the rebellion marker in the star system display and the planet will suffer a loss of PDBs due to guerilla activity. If for any reason the PDB garrison is reduced to zero the population has successfully rebelled and the planet rejoins its original empire.

Transports built on a conquered planet are identical to your own transports.

6. VICTORY CONDITIONS

Each player's performance throughout the game is assessed by the accumulation of victory points. There are four categories for which victory points are awarded, namely colony development, starship battles, planetary conquest and colony destruction. Appendix A details the exact point awards. The computer keeps a running total of the VPs awarded to each player and this total may be reviewed by calling up the victory point display.

At the end of every game, the computer will break in with the final compilation of VPs and declare the winner. You have the option of continuing the game which will extend it for another 100 turns. This means the game could be extended indefinitely for those of you with a desire to try and colonize every planet.

Overwhelming Victory occurs if, at any time, one player's VP total is greater than all other players combined (if variable victory conditions are in effect this means the true VP totals, not the displayed ones).

7. SAVING GAMES

Games may be easily saved to any disk using the standard file saving system, simply select Save As from the File menu, fill in the name you wish to save the game under, and follow the instructions in the window.

If the game has been previously saved or was loaded from disk you may also pick the Save option from the menu which automatically saves the game to its file without asking any questions.

Loading a saved game is just as simple. Select Restore Game... from the File menu. This may be done either from the start up screen or while another game is in progress. A dialogue box appears with instructions. The game will return to the same turn in which it was saved, allow any human players who had not finished their turns to enter orders and then proceed as normal.

8. THE MAIN MENU

8.1. File

Save. This item saves the game to the current save game file. If there is no file the item will be disabled and games must be saved through the Save As item.

Save As. This item allows you to name a new save game file, and saves the game to that file.

Restore. Prompts for the name of a save game file and restores the game.

End Game. The game will stop and display the current victory points. You will be prompted and if you agree, will be returned to the game start screen.

Quit. You will be prompted and if you agree you will be returned to DOS.

8.2. Status

Full Map. This item will open the strategic map. It indicates your colonies as solid markers and other stars as open markers. It also indicates the presence of ships as small squares placed around the star, starting with player one at top left then moving clockwise through to player four at bottom left (The same order as used for displaying icons on the space screen and locating combat reports in the combat display).

VP Report. This will open the victory point display. It shows the VPs accumulated by each player for each of the four categories and the total of these. It also shows the true victory points for your empire under the normal VP line for your empire. When the variable victory point rules are not in effect, the true VP total will be the same as the one shown. When the game ends this screen is displayed with all empires true victory points visible.

Explored Systems. The explored systems list allows you to review all the star systems with details for all planets in systems that have been explored, with the normal visibility restrictions.

Task Forces. A list of all ships and task forces is given showing the number of each ship type present, their location, destination (if any) and ETA to that destination.

Display Options. This item will open the options window to show you what options are currently in effect.

Production Costs. This item shows the production costs of all elements in the game.

Movement Points. Shows the Movement Points of all ships in the game.

8.3. Auto Explore

Upon choosing this item all currently unassigned scout ships will be placed into individual task forces and given an unexplored star as a destination. The auto explore feature is then disabled until your next turn. The choices made are, as usual, not permanent. You may go to the newly created task forces and alter their destinations or reform them if you wish.

8.4. End Turn

This ends your turn and allows other players to enter their orders. Once this is selected you may make no further changes until next turn.

8.5. Auto Turn

This item also ends the turn but before doing so the computer will give any production orders that seem necessary, if the production phase is still in effect, and will give move orders to any unassigned ships that it feels should be moved or assigned to colonisation. In effect you may play as a computer player by choosing this item without giving any orders in your turn, or use it to take care of trivial details you are not concerned with.

9. COMMAND SUMMARY

The key-strokes used in the game are summarised below. Refer to the main text of the manual for more details about the actual game mechanics.

Arrow Keys. Move the cursor through data fields or menu choices. On the space window they move the cursor to the edge of the screen and then scroll the screen.

Enter/Return. Accepts the entry in a data field or executes a menu choice. In the space window hitting enter/return with the cursor over a star will bring up the star system display and any task force or production windows belonging to that star.

Insert. Moving the cursor to a star and hitting INS will display the star system window only for that star.

Delete. Deletes the current window and makes the next open window the current window. The space window and the production screen cannot be deleted.

Plus. The Plus key on the numeric key-pad will bring the current window to the front of the screen. The space window cannot be brought to the front.

Minus. The Minus key cycles the current window around the windows on the screen.

Home. In the space window, Home centres the screen on the current cursor location. In scrolling report screens, Home returns the screen to the beginning of the report.

End. In scrolling reports, moves the screen to the end of the report.

PageUp/PageDw. Scrolls reports up or down one window at a time.

Space bar. In the destination field of the Task Force Control window, hitting the Space-bar will blank the current entry without moving the cursor. This allows you to edit mistakes without leaving the field.

Backspace. Deletes the current character in a data field.

Esc. Toggles the cursor between the data and menu areas of the current window. Not all windows have menu areas.

F(n). This is a function key between 1 and 9. Typing F(n) executes the nth choice in the current window's menu area, without having to move the cursor to that menu area. For example F(3) executes the third menu item.

Alt f(n). The main menu line will always be visible at the bottom of the screen. Holding down the Alt key while typing F(n) will execute the nth choice of the main menu line without having to move the cursor to the menu line. Thus Alt F(4) will execute the 4th choice from the main menu line (which is Endturn, and is therefore a quick way of ending the turn).

F(10)/Tab - The F(10) key or the Tab key is a special key for toggling between the production screen, which always occupies the entire screen, and the space screen. Extra Information - If there is any information not covered in the documentation, it will be contained in a file README.DOC on the disk.

10. BASIC OPTIONS

Tutorial. Selecting the tutorial option causes the game to follow a predictable sequence. This means that once the game is started, if you perform precisely the same actions each time you will get precisely the same results. The tutorial game in Chapter 4 requires you to use this option. If playing with the Tutorial option on you must enter items exactly as they are listed in the example. The results of not doing so are unpredictable.

Novas. This option allows stars to become unstable and means that a few of them will probably go nova in the course of a game. The risk becomes greater as the higher starship technologies are achieved because of their effect on the fabric of the space-time continuum. You will usually get some notice of the impending disaster in the star system display and you will be permitted to emigrate most of your population. In addition there is a chance that the stars outer atmosphere will restabilise and the star will revert to normal.

If the star does go nova all planets and ships in the system are obliterated and any ships dropping in from hyper-space in this system on subsequent turns will meet a similar fate.

Natural Disasters. Plague, earthquakes, pollution and other natural and technological disasters can visit a planet in the course of a thousand years. At any time a disaster may hit a planet, damaging population, industry and environment. Plague may linger on a planet for two or three generations.

When a planet has suffered from a disaster the type of disaster is indicated on the star system display.

Xenophobes. Xenophobes are a miasmic life form which drift in clouds from system to system. Their effect on all known forms of life is to cause extreme xenophobia and interstellar trade with such infested star systems becomes impossible; the planets are, in effect, interdicted. Further more, combat in such a system results in a battle frenzy of unparalleled proportions, and losses from combat are greatly increased.

Xenophobes can not be attacked or manipulated in any way. They may be seen in deep space as well as in a star system, but have no effect there.

Solar Debris. Solar debris hexes represent navigational hazards and limit faster than light travel. Whenever a task force enters such a hex it will end its move immediately and continue on next turn.

Random Star Map. The 54 star systems will be scattered about the galaxy. A challenging alternative with the advanced rules since it produces interesting territorial problems in conjunction with the navigation limits.

Task Force Setup. Rather than begin the game established on a planet, each player begins randomly in orbit about a star with no habitable planets. The players each have a fleet of 4 Mark 1s, 4 scouts and 60 transports, as well as 400 Global RPs that will become available when there is a colony to use them.

Note that this option is not compatible with the Advanced Scenario option.

Automatic Scout Movement. At the beginning of every player's move phase all scouts will automatically be assigned destinations. This option can really speed up the game. Note that there are no scouts in the Advanced Game.

Hidden Victory Conditions. This will make the Victory display inaccessible until the game is over so everyone is in the dark as to how well they are doing.

11. ADVANCED OPTIONS

Enhanced Veterans. If you ever feel that the computer veteran players aren't presenting you with enough of a challenge try a game or two with these good `ole boys. Remember, find them early and clobber them or you could be in for a resounding defeat!

Variable Victory Conditions. The actual VPs awarded for the various goals do not change with this option. Rather a multiplier is introduced to allow each player to emphasise some goals at the cost of others. During a normal game the VPs for all four categories have a multiplier of two. You may change any or all of these multipliers as long as the total is equal to eight and no multiplier is reduced below one.

When this item is selected a window opens. Each human player accesses the VP Adjust window by selecting the item for their empire.

Adjust the VP multipliers back and forth and you will see that you may only select Done when the total is eight. The computer will assign multipliers for its players without needing access to these windows.

During the game a player will always see his own multipliers and true VP total on the Victory Condition display but must wait until the game is over to see those of the other players.

Varying Production Costs. Select this item and you will be presented with a window which controls the level of RP expenditure for the production items. Experiment with changing these and document combinations that you find satisfying.

Varying Movement Allowances. Again, select this item to get a window with controls for the different ship class movement allowances. Remember that the game is often limited to the speed of the transport vessels, so a game with 1 MP for transport will be slow indeed!

12. THE ADVANCED SCENARIO

Selecting this option will cause a number of additions and changes to the normal game mechanics and options. It is recommended that you play a few games with the normal rules before trying these. Here are the changes.

Armies. Each planet may now support an army, drawn from the population during production. The army comes from the same pool of population as colonists so every population put in a transport will reduce those available for recruitment and vice versa. Up to one eighth of the population will be available for colonisation and recruitment. The army will appear as a value to the right of the PDB value on the star system display.

Armies must be maintained but this is no longer true of PDBs, instead 1 army unit is required in order to support every 2 PDBs.

When a planet is invaded the landing troops must now fight and defeat the local army in the combat system before the planet is conquered. If successful the invading troops become a local garrison.

PDBs. The maximum number of new PDBs that may be purchased during production is altered to one eighth of the planet's industry level. PDBs are not maintained and their production cost is fixed independent of current Ship Tech level. There is no maximum limit to the number of PDBs that may be constructed, provided they are supported.

Starships. First, there are no scout vessels in the advanced rules. Next, the maximum number of space vessels that may be ordered during production is limited to one eighth of the current industry level.

Navigation Technology. Each empire has a maximum navigation range based on the current navigation tech level. All players start at Nav Tech 1. This means that no ship can be given a destination outside of navigation range from a friendly colony. When assigning a destination to a task force stars that cannot be reached are highlighted, on the strategic map their names are blanked out. RPs may be allocated

to R&D for Nav Tech just as with Ship Tech, each new level of Nav Tech increases the radius from 3 to 4, then 5 and finally 7. All computer players get a bonus of one hex to their navigation range at each Nav Tech level except level four.

Industrial Technology. Each empire begins with an Ind Tech level of 1. RPs may be allocated to R&D for Ind Tech just as with Ship Tech. Each level of industrial technology gives planets in the empire a bonus to their GPP (Gross Planetary Product). This can be very important due to the high production costs with the advanced rules. The bonus at each tech level is as follows 2 - 25%, 3 - 50%, 4 - 100%.

Overpopulation. There is no overpopulation in the advanced scenario. At the end of each turn excess population is simply removed. Excess population may be placed in transports during the production phase as with the basic game but it is no longer an urgent problem.

Servicing the Population. The cost of providing consumer goods to the population increases as the social environment gets higher. For a Soc Env of 0 to 60 the service cost is still only 1 RP/Population, for 61 to 75 it becomes 2 RP/Population, for 76 to 90 it is 3 RPs and for 91 and higher it becomes 4RPs.

Conquered Planets. These have become much harder to maintain. To hold on to a conquered planet you must maintain an army equal to at least one quarter of the population. You may not recruit a conquered population into this army but must land more troops if you do not have sufficient for a garrison.

The following items have their production cost doubled on conquered planets; Industry, PDBs, starships, social and planetary environment, army maintenance, Ship and Nav technology.

Conquered planets may not contribute to Ind Tech R&D.

Planet Improvement. Once a planet's social and planetary environments are both at 80 or higher the planet's maximum population and industry both begin to increase. This is more likely for primary class planets and becomes less likely in order for secondary, tertiary and hostile planets. The ultimate maximum for Population and Environment is 100 , and for Industry is 200.

Production Costs. Many of these are altered. Consult the variable production cost screen with the advanced rules option turned on to see the full list or consult Appendix A. There is no interest on saved RPs in the advanced game.

13. WINNING STRATEGIES

13.1. Preparation

It is useful to have a copy of the map on which to scribble notes and make plans. Your computer may also have a screen dump or print function. If playing with other humans then it is never too early to begin making treaties, secret or otherwise, planning double crosses and playing Machiavelli in general.

13.2. The Basic Game

The first key to the economics of the basic game is population control. Each point of population produces 2 RPs but costs 1 RP to maintain for a net gain of 1 RP per point of population. The rate of population growth increases with Social Level and also with the absolute population level. Social Level is one of the main determinants of RP production so it has to be made as high as possible. The problem is that your subjects respond to the good life by breeding like rabbits, leading to the disaster of over-population.

The only solutions are to ship `volunteers' off planet or to not maintain your population. It is possible to create enough transports in each production turn to get rid of excess population, however each transport costs 10 RPs, so unless your pioneers are actually needed for starting another colony, this procedure is wasteful of RPs. Your initial colony will start with a population of 50 and should not be allowed to rise too much above this level. Some players like to keep the population even lower.

The act of not maintaining your population is a desperate one. The ungrateful populace will riot, reducing industry and social level and possibly (hopefully) killing some of themselves off in the process. If economic circumstances are such that you must deny your subjects some of the necessities of life, keep the shortfall small. A large deficit could see the population go ape and the planet back in the stone age.

Once you've sorted out your home world it's time to deal with the rest of the universe. You should have had your explorers scouting out likely spots. You want something with a reasonable industry and environment that is not too far away. Soon after starting your second colony you should think about moving to Mark II technology, something you should achieve around turn 20.

In order to have the luxury of continuing to run an economy, you will need a long term military plan. This will depend on the type of opponent you are facing. We will describe the behaviour of veterans, as the others are lesser opponents. In fact beginners deliberately make mistakes, in order to make themselves easier to beat.

Veterans work from a hate index. All veterans hate human players simply because they exist (for which you can't blame them). They also hate any player who takes a colony from them (very sensible) and the player coming first (quite human really).

If you are a human player, coming first, who takes a colony from a veteran, you have just guarantied retribution.

Conceivably you could do this to more than one computer player. This is what we call a high risk option. The best way to win is to come from behind.

Sometimes the burden of choosing an opponent will be lifted from you, as an invasion fleet pays a courtesy call. Sometimes you might be left alone for a while but as Clark Kent continually discovers, being inoffensive yourself is no guarantee of a peaceful existence. Choice of opponents is an art and depends on a number of factors.

Your first task is to locate them. The disappearance of explorers as they are vaporised by real warships over a star system is one clue. As your economy progresses you can start sending MK Is on lone recon missions.

These will force a real space battle and at least reveal the number of enemy ships before they are valiantly but inevitably reduced to their component atoms. If there are no enemy warships you will get a report on the star system and interdict it,

cutting it off from all Global RPs. (This is why you should always maintain a standing patrol over all of your planets).

There are many other ways to find the enemy. The location of space battles between other players should always be noted, as there is almost certainly a colony there.

Finding home planets is not difficult if you take into account the start-up conditions. All players, computer or human, start on a system with one and only one planet, relatively high population and industry between 30 and 45. There are not many systems in the universe that will fit the bill. Simply send a Mk 1 to all of the candidates and observe the results.

If the enemy is maintaining a space patrol you will still not see the planet but will force a battle. If you are using Auto Explore then by Turn 20 all of the galaxy should have been explored. The only stars not explored are probably those pulverising your scouts. This calls for a reconnaissance in force.

When it comes to space battles, the overwhelmingly important principle is that of concentration. As the range of warships increases markedly at higher technologies it becomes impossible to defend all parts of your empire at all times. Your opponents will simply concentrate and crush your detachments. You cannot stop this. You must be able to respond in kind or you are doomed.

The basic game moves very quickly so all actions must be adjusted to the game length. The usual winner in a basic game against three veterans keeps out of trouble for as long as possible building an economic base. He then comes from behind in a withering burst, gaining enough points to leap into the lead just at the very end of the game. Sometimes this can be done at the expense of the weakest of the computer players, who may have already suffered at the hands of the others.

13.3. The Advanced Game

The Advanced Game has a slower and more strategic feel. The restrictions on movement and the higher production costs combine to make a game where position

is much more important. Moreover, the new rules for PDBs and Armies mean that planets can be made much more resistant to attack.

The Classic Opening. Resource points are, as always, the key to winning the game. In the advanced game a problem occurs as the planet's social environment climbs, increasing the cost for maintaining your population. As a result it is important that you do not spend RPs to increase the planet's social level, as it will drift up towards the planetary environment anyway. Your first priority is to increase industrial technology as early as possible to level two and to maximise the planet's industry.

After reaching the second level of industrial technology, increase the planetary environment to 85 or 90. The social environment will again climb towards this new level although you may choose to push it along a bit. Once both the social and planetary environments cross the 80 mark the planet's industrial capacity will begin to increase and you will rapidly climb out of the "resource hole".

Note that once you start paying three or more resource points per population your inhabitants are consuming more RPs than they produce in the RP formula.

At most, build one Mark I for initial exploration purposes. This should be delayed until turn ten. The cost of such a vessel whilst still struggling with your initial resource problems can be prohibitive.

The Trout Variant. This variation on the Classic Opening involves eliminating your initial planetary army on the first production round. This means you will also lose the twelve PDBs that the army is supporting. The advantage is that you save on the army's maintenance cost (four RPs apiece) at an early stage of the game, giving you that extra edge on initial development. It is unlikely that you will find yourself in need of planetary defences until turn 20 or later in the advanced game, due to the navigation limitation placed on space travel.

Gilligan's Island. Once in a while you may begin a game in a star system that has no neighbours within range for navigation technology one. Don't Panic! This is an excellent position from which to use the Trout Variant with a Classic Opening, based

on the assumption that if you can't get to them, they can't get to you. Do be aware of the fact that computer players, presumably through the employment of fiendish cybernetic technology, have a one hex bonus on all except level for Nav Tech. Once you have acquired the second level of industrial technology, switch your R&D efforts to attaining navigation technology two.

The Bell Colonisation Technique. When picking early colonisation targets, consider the fact that population becomes a drag on the economy. It is often best to choose a planet that has a population capacity of between 15 and 20 with a high industrial capacity. A planetary environment as low as 35 will suffice, as long as you land with enough global resource points allotted to increase this to a minimum of 40, give a quick boost to the social environment and perhaps some initial industrial development. Unless you wish to force the population or industrial capacity up, by going over 80 in both social and planetary environments, do not increase the planetary environment above 59. Your social level will then remain low enough so as not to increase your population consumption requirements.

The Picket Play. Unlike basic Reach for the Stars there is a great emphasis on territory, based on navigation range and colony location. This means it is possible to place patrol ships in a cloud about your own territory that can detect and perhaps repel alien interlopers. This is achieved by placing one or two Mark I vessels about each star system within range. If any aliens wish to colonize in your region of space, or build up for an attack on one of your worlds, you are then likely to know about it.

Beware, the cost in setting up your picket is minimal once you have three or four planets fully industrialised but setting up a picket early in the game can be detrimental to your economic foundation.

A more complicated variation on this is to create patrol squadrons of around six ships, each squadron moving continuously around three star systems assigned to it. This requires much more administration on your part but such patrols are more effective when they come across enemy fleets.

Fortress Whiley. The object of this game play is to determine where your nearest opponents are and then colonize away from them. The planets closest to

your opponents, initially your oldest worlds and later in the game worlds around the edge of your empire, become fortress planets, heavily armoured and patrolled while your inner worlds may be significantly free of defence spending. Thus your inner worlds become efficient RP producers that subsidise all your other colonisation and conquest efforts.

The danger with this strategy is the potential for an alien break through when one of your fortress worlds is conquered, allowing a strike into the soft interior. Be prepared for this and respond quickly if it occurs. The premise behind this strategy is that the RPs saved by not fortifying all planets will allow a larger space navy to be built when your system is finally threatened.

The Isolationist. Occasionally it is possible to avoid contact with the other players for a considerable time. You may then choose to "lay low" for a while, colonising and building up your space fleets whilst keeping an eye on the victory points.

There is a danger that your opponents, having found each other, will generate huge victory points by going to war, and they will quickly outdistance you, so timing and control is important. When playing computer opponents especially, the idea is to keep your own victory points from placing you in the first place position until you are ready to make a major push from which you hope your opponents will not have time to recover. This will often involve knowing where your opponents have their best worlds and leaving them alone for some time, watching them across the gulf of space with envious eyes, and slowly but surely drawing your plans against them.

A Note on Invasions. To successfully invade a planet you must have enough ships to survive all four stages of such a task. First you must defeat any space fleet in the star system. This will result in losses to your warships and transports. Secondly you must defeat the planetary defence bases. This will only involve warship loses and these ships are not needed after this.

It may be an idea to hold back a few ships to ensure cover for the planet if you succeed, and interdict vessels if you fail. Thirdly, you must invade the planet with

your transports and overcome the native army. This will involve losses in the troops that you will need for the final stage.

Once the enemy army is defeated you must have enough remaining troops to hold the planet's population in check.

Such a conquered colony can be hard to hold. Be prepared to send back-up colonists to the planet to increase the garrison because you can't conscript the locals.

In general you want slightly more warships than the expected number of PDBs and a number of transports greater than the defending army size plus one quarter of the planet's population.

Note, also, that to rescue your own planet from the clutches of some conquering space slime you will need not only to wipe out any PDBs they may have built but also land troops to take on their garrison (You may just bombard the planet from space but you are more likely to decimate your own population than damage the conquering garrison).

The End Game. As that last turn approaches you may already know whether you have won or lost. It is only when the points are close that you can do much about the outcome. Remember, now is the time for the Isolationist to strike, beware, look to consolidate and hold what you have got if you are the winner, consider mad and ambitious schemes worthy of Ming The Merciless if you are not.

The Long Game. 150 turns is the maximum game length that you may select when playing Reach for the Stars but there is no theoretical limit on the number of turns you may play by striking the continue game button on the last turn. Many of the game testers have found it enjoyable to set themselves the task of eliminating all opposition and colonising the entire universe. When playing against computer opponents, if you are at least holding your own by turn 150 you will probably succeed in an indefinite length game.

When playing the Long Game the game itself becomes more of a lifestyle than a past-time, one game on record having gone on for several weeks, up to a record 405 turns, before victory was assured. Try it, you'll love it.

14. WHO’S DONE WHAT?

Reach for the Stars is the first game published by Roger Keating and myself: back in the days when SSG was just Roger and I.,. and whichever of our luckless friends we could rope in for some help.

Now, some five years and two major revisions later, the game is still going strong. This third edition has been mulling around in our heads for nearly two years. A lot of things have been done to make it more enjoyable than its predecessors.

The advanced scenario is a demanding test of your ability to manage and develop a dynamic economy in a galaxy where space is at a premium, budget surpluses seem impossible to generate and your populations grow ever more greedy as the years go by. It's almost a relief to build a few warships and embark on a simple head-kicking mission.

One thing is for certain. The advanced scenario has had plenty of testing. It's addictive! The superior graphics ability of the larger machines and their friendlier interfaces make the Amiga, Ilcs and Macintosh versions a delight to play. IBM users, especially in EGA mode, will enjoy most of these advantages.

For Apple II and C64/128 users, the interface has been radically improved, speeding up game play considerably.

No matter which computer type you own, you're in for a treat.

Some very talented people have worked with us on the conversions.

Danny Stevens created the Macintosh version as well as providing the C code for the Amiga, IBM and Iles versions.

Mark Twigg created the Amiga version.

Alan Bell created the Iles version.

Gregor Whiley had the invidious job of co-ordinating the project.

Roger and I did the work on the Apple II and C64/128 revisions.

Ian Trout

Sydney

January, 1988

APPENDIX A

A.1. Advanced Scenario Development Costs

Industrial Capacity	10	Planetary Envir. Inc.	10
Transports	25	Mark II Tech.	+700
Mark I Starships	40	Mark III Tech.	+2000
Mark II Starships	90	Mark IV Tech.	+5000
Mark III Starships	200	Nav II Tech.	+400
Mark IV Starships	500	Nav III Tech.	+1500
PDBs	50	Nav IV Tech.	+4000
Armies	12	Indust II Tech.	+500
Army Maint.	4	Indust III Tech.	+1800
Social Level Inc.	4	Indust IV Tech.	+6500

A.2. Victory Point Awards

Colony Development. Each player receives 1 VP for every 16 population and industrial units on controlled native planets. These points are awarded every turn.

Starship Battles. Only the winner of a battle receives VPs for destroying enemy ships. Transports = 10, Mk Is = 4, Mk IIs = 8, Mk IIIs = 12, MK IVs = 20.

Planetary Conquest. Each player receives 1 VP for every 4 population. 8 industrial units and 16 garrisons on conquered enemy planets. These pints are awarded every turn.

Colony Destruction. Each player receives 4 VPs for the destruction of each unit of enemy population, industry and occupying garrison.

A.3. Distribution of Planet Types

SPECTRAL CLASS	PLANET TYPE (%)			
	Prim.	Sec.	Tert.	Host.
B	2	13	37	48
F	19	25	13	43
G	55	13	13	19
K	13	31	19	37
M	7	19	37	37

A.4. Planetary Characteristics

PLANETARY CHARAC.	PLANET TYPE			
	Prim.	Sec.	Tert.	Host.
Population	70-100	40-80	20-50	20-30
Industry	26-60	25-70	25-80	25-100
Environment	55-100	30-80	10-55	5-20